Spring 2010

Final Presentation

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Phys 1307 – Presentation 2010

You are a nanotechnologist with a good idea. Your mission is to present your idea to venture capitalists from BlackBox Inc. and convince them to fund your project. BlackBox Inc is looking for a project that will be viable within 10 years and be profitable. BlackBox Inc. already has fabrication facilities in place (and a good amount of money), so they just need a new idea. Your task is to choose a topic from the list below and pitch it to the venture capitalists from BlackBox Inc.

The rest of the class will play the part of the venture capitalists. As you listen to your fellow student's presentations, you will take notes and are expected to ask questions you have about their new technology. At the end of the presentations, the class will vote on which project to fund (you cannot vote for your own project). The project with the most votes earns bragging rights and an A on the presentation.

20% of your grade will be based on your Power Point slides, 30% on your presentation, 20% on your annotated bibliography, 20% on your pamphlet, and 10% on how you answer questions from the audience.

Project requirements:

1. **Sales Pitch:** A ~20 minute Power Point Presentation given to the class describing your new technology, its advantages, and its limitations (you don't want to promise things you can't deliver). Your presentation should include the following information:

- What fabrication methods are used for this technology?
- What is the basic idea behind the technology?
- What are the benefits of the technology?
- What are the future directions of your technology?
- What are the limitations of your technology?
- Are there any environmental concerns for this technology?

At the end of your presentation, I will open the floor to questions, so be prepared to answer questions from your classmates.

2. **Documentation:**

You will turn in either a pamphlet or handout for the venture capitalists (the class) that summarizes your presentation and lists your sources. Bring 20 copies to class on the day you present.

3. **Annotated Bibliography** – Evaluative, not just summative!

You will turn in to me a list of our sources along with a description of the information gained for you presentation. In addition, you must evaluate each source – do you trust it? Is it peer-reviewed information?

Logistics: You may pick a topic from the topics below or one of your choosing. Please clear topics not on the list with me. In addition to the 'seed' reference listed, you must have 2 additional references. Your pamphlet and annotated bibliography is due the day you give your presentation.

Listed below are the suggested topics. I don't want more than 2 people doing a topic, so look over this list before Tuesday. On Thursday come to class with at least two choices and I will try to accommodate everyone. You are free to choose your own topic if you would like!!!

Important dates:

Tuesday March 23: Pick paper topics and schedule presentation times.
Tuesday April 6: First day of presentations
Thursday April 29: Last day of class. Voting for best presentations.

Possible Paper Topics: Look on TLEARN for starter papers in 'Documents'

1. Scaffolds for Tissue Engineering
2. Microfluidics for cell-based assays
3. Carbon Nanotubes
4. Carbon Nanotube reinforced ceramics and metals
5. Bio-inspired antifouling polymers
6. Polymeric systems for modulated drug delivery
7. Nanowire Nanosensors
8. Nanoshell tissue welding
9. Nanoshell cancer imaging and therapy of cancer
10. Nanofluids for thermal transport
11. DNA microarrays
12. Chromogenic smart materials
13. Cantilever array sensors
14. *In vivo* drug delivery systems
15. Magnetic nanoparticles bioprobes
16. Microfluidics for chemical synthesis
17. Solar Cells: **Title:**Air-stable all-inorganic nanocrystal solar cells processed from solution
    Author(s): Gur, Ilan Fromer, Neil A. Geier, Michael L. Alivisatos, A. Paul
    Source: Science (0036-8075), vol: 310 (5747) 2005 p:462 –465
    (This should be online now…)
18. Bio-applications of Colloidal crystals
19. Carbon Nanotube as electric field emitters
20. Labeling cells with quantum dots
21. Nano Barcodes as sensors